

FORM PTO-1390 (REV 10-94)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		DOCKET #: 3245-799PUS
<b>TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371</b>				
				U.S. APPLICATION NO. <b>09/7787618</b>
INTERNATIONAL APPLICATION NO <b>PCT/DE99/02795</b>		INTERNATIONAL FILING DATE <b>August 30, 1999</b>		PRIORITY DATE CLAIMED <b>September 21, 1998,</b>
TITLE OF INVENTION <b>Allocation of a Channel for Data Calls with a Different Useful Signal/Disturb Signal Ratio than for Channels Used for Voice Calls in Mobile Radio Networks</b>				
APPLICANT(S) FOR DO/EO/US <b>Martin KELLER; Frank LAMBRECHT; Stefan LEINENBACH; Joachim RICHTER; Robert WAHSNER;</b>				
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:				
<ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371</li> <li>3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).</li> <li>4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.</li> <li>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))           <ol style="list-style-type: none"> <li>a. <input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).</li> <li>b. <input type="checkbox"/> has been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US)</li> </ol> </li> <li>6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).</li> <li>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))           <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau).</li> <li>b. <input type="checkbox"/> have been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input type="checkbox"/> have not been made and will not be made.</li> </ol> </li> <li>8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li> <li>9. <input checked="" type="checkbox"/> An UNEXECUTED oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</li> <li>10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</li> </ol>				
<b>Items 11. to 16. Below concern other document(s) or information included:</b>				
11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.				
12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.				
13. <input checked="" type="checkbox"/> A <b>FIRST</b> preliminary amendment. <input type="checkbox"/> A <b>SECOND</b> or <b>SUBSEQUENT</b> preliminary amendment.				
14. <input type="checkbox"/> A substitute specification.				
15. <input type="checkbox"/> A change of power of attorney and/or address letter.				
16. <input checked="" type="checkbox"/> Other items or information ( <i>specify</i> ): PCT Publication Sheet, Int'l Preliminary Examination Report, Int'l Search Report, PCT Request,				



U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

09/787618

INTERNATIONAL APPLICATION NO.  
PCT/DE99/02795

ATTORNEY'S DOCKET NUMBER  
3245-799PUS

17.[x]The following fees are submitted:

**Basic National Fee (37 CFR 1.492(a)(1)-(5)):**

Search Report has been prepared by the EPO or JPO ..... \$860.00  
 International preliminary examination fee paid to USPTO (37 CFR 1.482).....\$690.00  
 No international preliminary examination fee paid to USPTO (37 CFR 1.482)  
 but international search fee paid to USPTO (37 CFR 1.445(a)(2)) ..... \$710.00  
 Neither international preliminary examination fee (37 CFR 1.482)  
 nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... \$1000.00  
 International preliminary examination fee paid to USPTO (37 CFR 1.482)  
 and all claims satisfied provisions of PCT Article 33(2)-(4) ..... \$100.00

ENTER APPROPRIATE BASIC FEE AMOUNT =

\$860

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months  
 from the earliest claimed priority date (37 CFR 1.492(e)).

\$

Claims

Number Filed

Number Extra

Rate

Total Claims

15- 20 =

0

x \$18.00

\$

Independent Claims

4 - 3 =

1

x \$80.00

\$80

Multiple dependent claim(s) (if applicable)

+ \$270.00

\$

TOTAL OF ABOVE CALCULATIONS =

\$940

Reduction of 1/2 for filing by small entity, if applicable.

\$

SUBTOTAL =

\$940

Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30  
 months from the earliest claimed priority date (37 CFR 1.492(f)).

\$

TOTAL NATIONAL FEE =

\$940

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be  
 accompanied by the appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property

\$

TOTAL FEES ENCLOSED

\$940

Amount to be refunded:

\$

Charged:

\$

- a. ☒ One check in the amount of \$ 940 to cover the above fees is/are enclosed.  
 b. ☐ Please charge my Deposit Account No. 03-2412 in the amount of \$ \_\_\_\_\_ to cover the above fees. A duplicate copy of  
 this sheet is enclosed.  
 c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any  
 overpayment to Deposit Account No. 03-2412. A duplicate copy of this sheet is enclosed.

**NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive  
 (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.**

SEND ALL CORRESPONDENCE TO:

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09/787618

Express Mail No. EL 759575304 US

GC10 Rec'd PCT/PTO 21 MAR 2001  
Attorney Docket # 3245-799PUS

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re National Phase PCT Application of

Martin KELLER et al.

International Appln. No.: PCT/DE99/02795

International Filing Date: August 30, 1999

For: Allocation of a Channel for Data Calls with a  
Different Useful Signal/Disturb Signal Ratio than  
for Channels Used for Voice Calls in Mobile  
Radio Networks

**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

**BOX PCT**

**S I R:**

Prior to the issuance of a first Office Action and simultaneously with the filing of  
the present application, please amend said application as follows:



In the Specification:

Page 1, delete line 4;  
after line 4 insert --BACKGROUND OF THE INVENTION--.

Page 2, after line 9 insert --SUMMARY OF THE INVENTION--;  
the paragraph starting at line 10:

The object of the present invention is, for a mobile radio network predetermined with respect to the available frequencies, the optimized utilization of the capacities taking into consideration the different quality requirements for data and voice calls in the allocation of requested channels.

Page 3, the paragraph starting at line 4:

The method can be implemented in a mobile radio telecommunication network by designing the allocation devices there in such a manner that when a data channel is requested, a physical channel having a better wanted-to-unwanted signal ratio is preferably selected than when a voice channel is requested.

after line 15 insert --BRIEF DESCRIPTION OF THE  
DRAWING--;

after line 21 insert --DETAILED DESCRIPTION OF THE  
PREFERRED EMBODIMENTS--.

Page 4, the paragraph starting at line 25:



To be able to optimize the increased requirements for the wanted-to-unwanted signal ratio in data channels in an existing mobile communication network, a physical channel is preferably allocated as data channel if it has a better wanted-to-unwanted signal ratio than other physical channels due to the frequency distributions in radio cells which are directly and/or indirectly adjacent. The allocation to good physical channels can be "preferential" in as much as it takes place if channels which are good with respect to the W/UNW ratio are free or can be cleared of voice calls.

Page 5, after line 24 insert the following:

--Thus, while there have been shown and described and pointed out fundamental novel features of the present invention as applied to a preferred embodiment thereof, it will be understood that various omissions and substitutions and changes in the form and details of the devices illustrated, and in their operation, may be made by those skilled in the art without departing from the spirit of the present invention. For example, it is expressly intended that all combinations of those elements and/or method steps which perform substantially the same function in substantially the same way to achieve the same results are within the scope of the invention. Substitutions of elements from one described embodiment to another are also fully intended and contemplated. It is also to be understood that the drawings are not necessarily drawn to scale but that they are merely conceptual in nature. It is the intention, therefore, to be limited only as indicated by the scope of the claims appended hereto.--

In the Claims:



Please cancel claims 1-14 and add the following new claims:

15. A method for allocating a channel requested for a telecommunication link via a telecommunication network between a caller and a called party, the method comprising the steps of: selecting at least one physical channel having a different wanted-to-unwanted signal ratio when a data channel is requested than when a voice channel is requested; and allocating a physical channel for an air interface in a mobile radio network.

16. A method as defined in claim 15, wherein the selecting step includes preferentially selecting when a data channel is requested, at least one physical channel having a better wanted-to-unwanted signal ratio than when a voice channel is requested.

17. A method as defined in claim 15, including allocating a number of physical channels to one data channel.

18. A method as defined in claim 16, wherein the better wanted-to-unwanted signal ratio of a data channel compared with a voice channel is achieved by allocating, in a mobile radio cell, at least one physical channel in each case to a data channel the disturbance of which by physical channels of at least one of identical and adjacent frequencies in adjacent radio cells is less than in the case of other physical channels.



19. A method as defined in claim 15, wherein the data channel is one of a bidirectional and unidirectional simplex or duplex channel connected between the caller and the called party.

20. A method as defined in claim 15, including packet-switching data transmission between the caller and the called party.

21. A method for planning a mobile radio network, comprising selecting at least one physical channel having a different wanted-to-unwanted signal ratio for a data channel than for a voice channel.

22. A method for planning a mobile radio network, comprising selecting at least one physical channel having a better wanted-to-unwanted signal ratio for a data channel than for a voice channel.

23. A method for planning as defined in claim 22, including achieving the better wanted-to-unwanted signal ratio of a data channel compared with a voice channel by allocating in a mobile radio cell in each case at least one physical channel to a data channel having disturbance by physical channels of the same and/or adjacent frequencies in adjacent radio cells that is less than in other physical channels.

24. A method for planning as defined in claim 21, including achieving the different wanted-to-unwanted signal ratio of a data channel compared with a voice channel by



allocating in a mobile radio cell in each case at least one physical channel to a data channel having disturbance by physical channels of the same and/or adjacent frequencies in adjacent radio cells that is less than in other physical channels.

25. A mobile radio telecommunication network, comprising a plurality of adjoining mobile radio cells having channel allocation devices for allocating requested channels to at least one of a caller and a called party, the channel allocation devices being operative so that at least one physical channel having a different wanted-to-unwanted signal ratio is selected when a data channel is requested than when a voice channel is requested, the allocation of a physical channel being effected for an air interface in a mobile radio network.

26. A mobile radio telecommunication network as defined in claim 25, wherein the allocation devices are operative to select at least one physical channel having a better wanted-to-unwanted signal ratio when a data channel is requested than when a voice channel is requested.

27. A mobile radio telecommunication network as defined in claim 25, wherein a number of physical channels are allocated to one data channel.

28. A mobile radio telecommunication network as defined in claim 26, wherein the allocation devices are operative to select the better wanted-to-unwanted signal ratio of a data channel compared with a voice channel by allocating in a mobile radio cell in each case at least one physical channel to a data channel, the disturbance of which by physical channels of at least



one of identical and adjacent frequencies in adjacent radio cells is less than in other physical channels.

29. A mobile radio telecommunication network as defined in claim 25, wherein the data channel is one of a bidirectional and unidirectional simplex or duplex channel connected between the caller and the called party.

In the Abstract:

Please amend the abstract as follows:

An optimized utilization of the resources of a mobile radio network including a number of channels suitable both for the transmission of data and of voice is achieved by a mobile radio telecommunication network and a method for allocating a channel requested for a telecommunication link via a telecommunication network between a caller and a called party. Preferentially, a physical channel having a different wanted-to-unwanted signal ratio is selected when a data channel is requested than when a voice channel is requested.



REMARKS

The present amendment is submitted prior to the issuance of a first Office Acton and simultaneously with the filing of the present application.

With this amendment applicants have amended the specification, cancelled claims 1 to 14 and added new claims 15 to 29, all in an effort to place the application in better condition for examination.

Favorable action on the present application is respectfully requested.

Any additional fees or charges required at this time in connection with the application may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

COHEN, PONTANI, LIEBERMAN & PAVANE

By: 

Klaus P. Stoffel

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551 Fifth Avenue, Suite 1210

New York, N.Y. 10176

(212) 687-2770

21 March 2001



March 21, 2001

In The Specification:

Page 2, starting at line 10:

The object of the present invention is, for a mobile radio network predetermined with respect to the available frequencies, the optimized utilization of the capacities taking into consideration the different quality requirements for data and voice calls in the allocation of requested channels.[The object is achieved by the subject matters of the independent claims.]

Page 3, starting at line 4:

The method can be implemented in a mobile radio telecommunication network by designing the allocation devices there in such a manner that when a data channel is requested, a physical channel having a better wanted-to-unwanted signal ratio is preferably selected than when a voice channel is requested[, especially in accordance with the claims for the main method claim].

Page 4, starting at line 25:

To be able to optimize the increased requirements for the wanted-to-unwanted signal ratio in data channels in an existing mobile communication network, a physical channel is preferably allocated as data channel if it has a better wanted-to-unwanted signal ratio than other physical channels due to the frequency distributions in radio cells which are directly and/or indirectly adjacent. The allocation to good physical channels can be "preferential" in as much as it takes place if channels which are good with respect to the W/UNW ratio are free [of] or can be cleared of voice calls.



In the Abstract:

An optimized utilization of the resources of a mobile radio network [comprising] including a number of channels suitable both for the transmission of data and of voice is achieved by a mobile radio telecommunication network and a method for allocating a channel [(13)] requested for a telecommunication link via a telecommunication network between a caller [(1)] and a called party [(2), wherein preferentially]. Preferentially, a physical channel [(13)] having a different wanted-to-unwanted signal ratio [(13, 21)] is selected when a data channel is requested than when a voice channel is requested.

[(Figure 1)]



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JC10 Rec'd PCT/PTO 21 MAR 2001

Allocation of a channel for data calls having a different wanted-to-unwanted (W/UNW) signal ratio than in the case of channels used for voice calls in mobile radio networks

#### Description

The invention relates to a method for allocating channels requested for a telecommunication link via a telecommunication network between a caller and a called party, and a device for carrying out the method. It also relates to a planning method for allocating channels requested for a telecommunication link via a telecommunication network between a caller and a called party. In particular, it relates to the allocation of a channel for an air interface in a mobile radio network.

Mobile radio telecommunication networks are known, for example, from the ETSI GSM Recommendations.

From the book by Jacek Biala, 1996 edition, ISBN 3-528-15302-4, page 76, 3.4.1, it is known that a traffic channel (abbreviated to "logical channel" or "channel" in the text which follows), which is also called TCH or user channel, can be used as voice channel or data channel. A logical channel can be operated in each case in full-rate mode or in half-rate mode both as voice channel and as data channel. The transmission via a data channel can be both circuit-switched and packet-switched. Logical channels are mapped onto physical channels. A physical channel is characterized by a time slot and a frequency or a number of frequencies, respectively. A logical channel can contain a number of physical channels. In a multi-slot configuration, a number of time slots are used for one logical channel.

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The intensity of interference with a transmission via a "physical channel" by transmissions via other physical channels of identical or adjacent frequencies in the same mobile radio cell or an adjacent one depends on the wanted-to-unwanted signal ratio. The W/UNW ratio is given by the own transmitted power (wanted signal) and the unwanted signals from the adjacent radio cells. The unwanted signals are determined by the transmitting power of the interference source (mobile station or base station), the propagation conditions and the spatial distance between the interference source and the disturbed system.

The object of the present invention is, for a mobile radio network predetermined with respect to the available frequencies, the optimized utilization of the capacities taking into consideration the different quality requirements for data and voice calls in the allocation of requested channels. The object is achieved by the subject matters of the independent claims.

By preferentially selecting a physical channel having another (= different), particularly better wanted-to-unwanted signal ratio when requesting a data channel than when requesting a voice channel, the utilization of existing capacities (especially of frequencies) is optimized since the requirements for the wanted-to-unwanted signal ratio are different for data channels than for voice channels. The invention is significant especially for allocating a physical channel for an air interface ( $U_m$ ) in a mobile radio network. In the text which follows it is assumed that data calls need a higher W/UNW ratio than voice calls. This correspondingly applies in the reverse case. The better W/UNW ratio of a data channel in comparison with a voice channel is achieved, in particular, by the fact that in a mobile radio cell, a physical channel is in each case allocated to a data channel the disturbance of which by physical channels at identical and/or adjacent frequencies is less than in the case of physical channels to be preferentially allocated to voice channels. By voice channel, a channel requested for the transmission of voice is meant. A data channel is a channel requested (or possibly just used after observation of the mobile radio telecommunication network) for the transmission of data. A channel (voice channel or data channel) is, as already stated above, a traffic channel or TCH or user channel according to GSM or a comparable channel in other mobile radio networks or a channel still to be defined in future

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mobile radio standards. The request of a channel for voice or data is made by a subscriber (the caller, as a rule) in the mobile radio network. After channel allocation, the telecommunication link is set up between at least two subscribers.

The method can be implemented in a mobile radio telecommunication network by designing the allocation devices there in such a manner that when a data channel is requested, a physical channel having a better wanted-to-unwanted signal ratio is preferably selected than when a voice channel is requested, especially in accordance with the claims for the main method claim.

Allocation devices in the mobile radio telecommunication network can be all devices which are involved singly or jointly in the allocation of a channel in one or more radio cells. In particular, they can be devices such as a BSC, MSC, BTS, other facilities or a number of aforementioned facilities in combination.

Further features and advantages of the invention are obtained from the subsequent description of an exemplary embodiment, referring to the drawing, in which:

Figure 1 diagrammatically shows a channel between two telecommunication subscribers which can be used as data channel or voice channel.

Figure 1 shows two subscribers 1, 2, of which subscriber 1 is here located in a mobile radio network, namely radio cell 3 of the mobile radio network, radio cell 3 being surrounded by a few adjacent radio cells 4, 5, 6 shown by way of example, of which radio cells 4, 5 are immediately adjacent to radio cell 3 whereas radio cell 6 is indirectly adjacent to radio cell 3.

Subscriber 2 here has a landline connection (PSDN/ISDN etc.) which can be used for voice transmission 7 and (from a PC) for data transmission 8. The mobile radio subscriber 2 can also be located in a mobile radio network instead of a landline network. Subscriber 1 can communicate with subscriber 2 via the mobile radio network via his mobile radio terminal 9 in voice 10 or from his PC 12 (also via the mobile radio terminal 9, e.g. mobile telephone) in the form of transmitting and/or receiving data (not voice-related). In this arrangement,

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the mobile radio terminal 9 communicates with the BTS 14 of the mobile radio network via radio interface 13 ( $U_m$ ). From BTS 14, the telecommunication link of the subscriber 1 continues via BSC 15, the MSCs 16 and 17 to the landline terminal 18 of subscriber 2.

Subscriber 1 communicates with subscriber 2 via the radio interface 13 via a traffic channel = TCH = user channel. The traffic channel can be a full-rate or half-rate channel. Via such a channel, voice can be transmitted in which case it is called a voice channel and data can be transmitted in which case it is called a data channel. This is thus not a data channel like a short message service channel but a traffic channel.

From the immediately adjacent radio cells 4, 5 and the indirectly adjacent radio cell 6, data or voice are also transmitted to subscribers located in these radio cells 4, 5, 6 via radio interfaces. In this process, a radio signal 20 from a radio cell 4, 5 or 6 is also propagated as unwanted signal 21 into the radio cell 3 of subscriber 1. If it is intended to transmit from subscriber 1 to subscriber 2 via the radio interface 13 in such a manner that the physical channel 13 is used as data channel, the requirements for the wanted-to-unwanted signal ratio (13 to 21) are greater than when the physical channel 13 is used as voice channel. The wanted-to-unwanted signal ratio is the ratio of the received powers of the wanted signal 13 transmitted via the data channel to a signal acting as unwanted signal 21, particularly from an adjacent radio cell 4 or 5.

To be able to optimize the increased requirements for the wanted-to-unwanted signal ratio in data channels in an existing mobile communication network, a physical channel is preferably allocated as data channel if it has a better wanted-to-unwanted signal ratio than other physical channels due to the frequency distributions in radio cells which are directly and/or indirectly adjacent. The allocation to good physical channels can be "preferential" in as much as it takes place if channels which are good with respect to the W/UNW ratio are free of can be cleared of voice calls.



The planning for a mobile radio network should take place in such a manner that the necessary W/UNW ratios for data and voice calls are guaranteed in the area of the serving radio cells. This can be achieved, among other things, by avoiding issuing identical and/or adjacent frequencies in adjacent radio cells. It depends on different spatial situations such as radio cell sizes, impediments to wave propagation (buildings, mountains, etc.) and transmitting powers in which directly or indirectly adjacent radio cells a co-frequency and/or adjacent-frequency exclusion (i.e. the exclusion of issuing the same and/or the adjacent frequency within two radio cells) is defined. The prerequisites for directly or indirectly adjacent radio cells in a mobile radio network are implemented on the basis of various planning models in planning the mobile radio network.

According to the invention, physical channels are allocated to the data channels which have a better wanted-to-unwanted signal ratio with regard to unwanted signals from other radio cells (which are user signals there), than physical channels which are allocated to voice channels. Which physical channels can be used as data channels and which can be used as voice channels can be predetermined once or can be dynamically adapted. The wanted-to-unwanted signal ratio can be theoretically determined. In particular, the wanted-to-unwanted signal ratio can also be determined by measurements for the different frequencies in the radio cells and used as bases for the decisions in allocating physical channels.

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1. A method for allocating a channel (13) requested for a telecommunication link via a telecommunication network between a caller (1) and a called party (2), wherein at least one physical channel (13) having a different wanted-to-unwanted signal ratio (13, 21) is selected when a data channel is requested than when a voice channel is requested, the allocation of a physical channel (13) being effected for an air interface in a mobile radio network.

3. The method as claimed in one of the preceding claims, wherein a number of physical channels are allocated to one data channel.

4. The method as claimed in one of the preceding claims, wherein the better wanted-to-unwanted signal ratio of a data channel compared with a voice channel is achieved in that, in a mobile radio cell (3), at least one physical channel (13) is in each case allocated to a data channel, the disturbance of which by physical channels of identical and/or adjacent frequencies in adjacent radio cells (4, 5, 6) is less than in the case of other physical channels.



5. The method as claimed in one of the preceding claims, wherein the data channel is a bidirectional or unidirectional simplex or duplex channel connected between the caller and the called party.

6. The method as claimed in one of the preceding claims, wherein the data transmission between caller and called party is also packet-switched.

7. A method for planning a mobile radio network, wherein preferably at least one physical channel (13) having a different wanted-to-unwanted signal ratio (13, 21) is selected for a data channel than for a voice channel.

8. A method for planning a mobile radio network, wherein preferably at least one physical channel (13) having a better wanted-to-unwanted signal ratio (13, 21) is selected for a data channel than for a voice channel.

9. The method for planning as claimed in one of the preceding claims 7 or 8, wherein the better wanted-to-unwanted signal ratio of a data channel compared with a voice channel is achieved in that in a mobile radio cell (3), in each case at least one physical channel (13) is allocated to a data channel the disturbance of which by physical channels of the same and/or adjacent frequencies in adjacent radio cells (4, 5, 6) is less than in the case of other physical channels.

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10. A mobile radio telecommunication network (3 to 6, 14 to 17) comprising a number of adjoining mobile radio cells (3 to 6), in which channel allocation devices (14 to 17) for allocating requested channels to a caller and/or called party are designed in such a manner that preferably at least one physical channel (13) having a different wanted-to-unwanted signal ratio (13, 21) is selected when a data channel is requested than when a voice channel is requested, the allocation of a physical channel (13) being effected for an air interface in a mobile radio network.

11. The mobile radio telecommunication network (3 to 6, 14 to 17) as claimed in claim 10, wherein preferably at least one physical channel (13) having a better wanted-to-unwanted signal ratio (13, 21) is selected when a data channel is requested than when a voice channel is requested.

12. The mobile radio telecommunication network (3 to 6, 14 to 17) as claimed in one of claims 10 or 11, wherein a number of physical channels are allocated to one data channel.

13. The mobile radio telecommunication network (3 to 6, 14 to 17) as claimed in one of claims 10 to 12, wherein the better wanted-to-unwanted signal ratio (13, 21) of a data channel compared with a voice channel is achieved in that in a mobile radio cell (3) in each case at least one physical channel (13) is allocated to a data channel, the disturbance of which by physical channels of identical and/or adjacent frequencies in adjacent radio cells (4, 5, 6) is less than in the case of other physical channels.

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14. The mobile radio telecommunication network (3 to 6, 14 to 17) as claimed in one of claims 10 to 13, wherein the data channel is a bidirectional or unidirectional simplex or duplex channel connected between the caller and the called party.

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## Abstract

An optimized utilization of the resources of a mobile radio network comprising a number of channels suitable both for the transmission of data and of voice is achieved by a mobile radio telecommunication network and a method for allocating a channel (13) requested for a telecommunication link via a telecommunication network between a caller (1) and a called party (2), wherein preferentially a physical channel (13) having a different wanted-to-unwanted signal ratio (13, 21) is selected when a data channel is requested than when a voice channel is requested.

(Figure 1)

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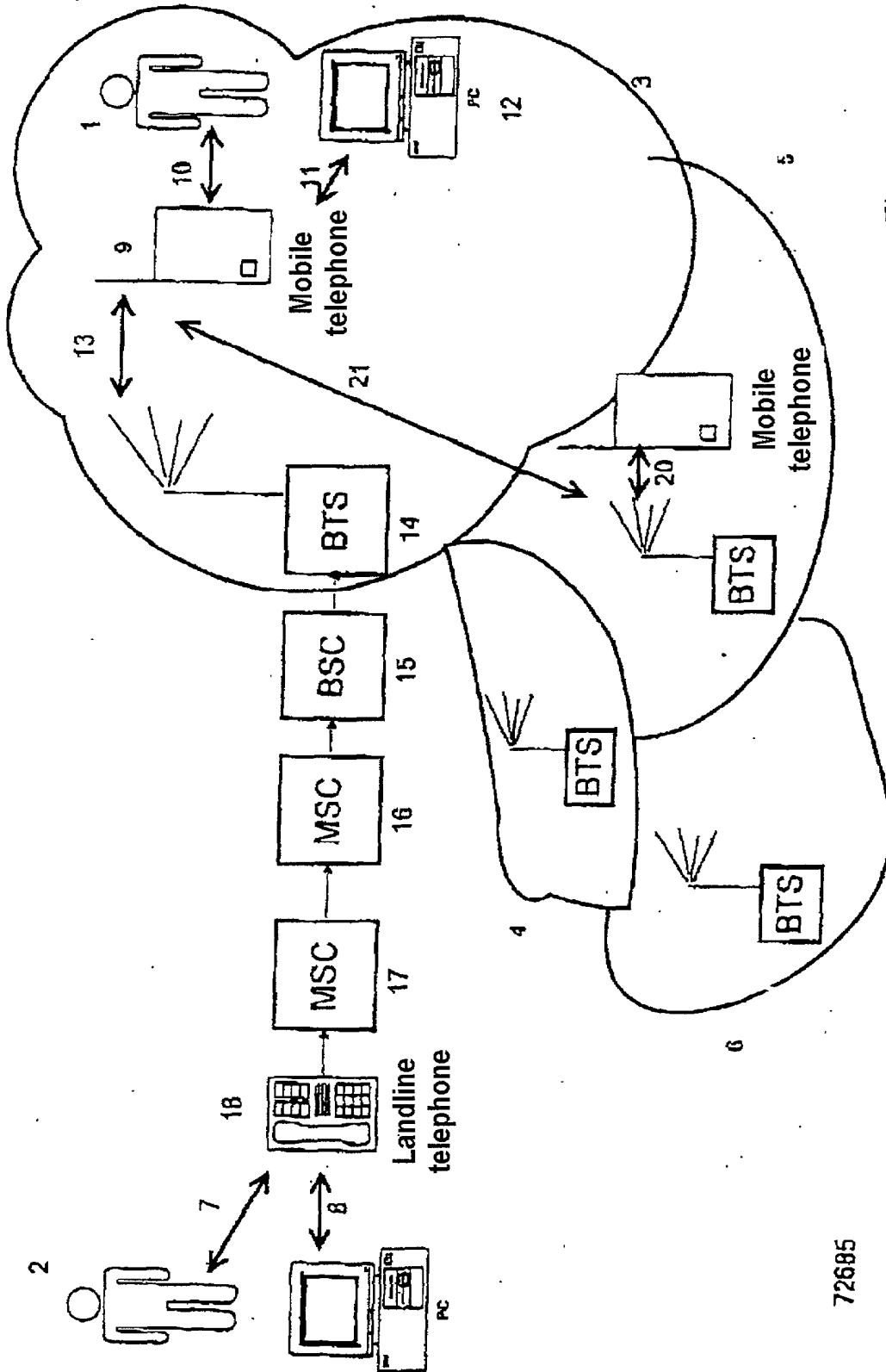


Fig. 1



**COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY**  
Includes Reference to PCT International ApplicationsAttorney's Docket  
3245-799PUS

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**ALLOCATION OF A CHANNEL FOR DATA CALLS WITH A DIFFERENT USEFUL SIGNAL/DISTURB SIGNAL RATIO THAN FOR CHANNELS USED FOR VOICE CALLS IN MOBILE RADIO NETWORKS**

the specification of which (check only one item below)

☐ is attached hereto☐ was filed as United States application

Serial No.

On

And was amended

On (if applicable).

☒ was filed as PCT international applicationNumber PCT/DE99/02795On 30 August 1999

And was amended under PCT Article 19

on \_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of the application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

**PRIOR FOREIGN/PCT APPLICATIONS AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:**

Country (if PCT, indicate "PCT")	Application Number	Date of Filing (day, month, year)	Priority Claimed Under 35 U.S.C. 119	
Germany	198 45 796.0	21 September 1998	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
PCT	PCT/DE99/02795	30 August 1999	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO



Continued Declaration for Patent Application and Power of Attorney (Continued)  
(Includes Reference to PCT International Applications)Attorney's Docket.  
3245-799PUS

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120:

U.S. APPLICATIONS		STATUS (check one)		
U.S. APPLICATION NUMBER	U.S. FILING DATE	PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.				
PCT APPLICATION NO.	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (if any)		
PCT/DE99/02795	30 August 1999		x	

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith (*List name and registration number*)

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201 Keller	SIGNATURE OF INVENTOR 202 Lambrecht	SIGNATURE OF INVENTOR 203 Leinenbach
DATE August 28, 2001	DATE August 16th, 2001	DATE August 20, 2001
SIGNATURE OF INVENTOR 204 Richter	SIGNATURE OF INVENTOR 205 Wahsner	SIGNATURE OF INVENTOR 206

August 28, 2001

Datum 24.09.2001

September 20, 2001

Donat bitte ausscheiden